

GPSTR / TET / HSTR ಮಾದರಿ ಪರೀಕ್ಷೆ - 2026**Subject : Mathematics****Unit : ಸಮಾಂತರ ಶ್ರೇಢಿ****Time : 1 Hr****Max Marks : 30****I. Multiple Choice Questions (MCQs)****(10 × 1 = 10 Marks)**

1. If the n^{th} term of an Arithmetic Progression is given by $a_n = 3n + 2$, then its common difference (d) is:

- (1) 2 (2) 3 (3) 5 (4) 1

2. The 10th term of the AP 2, 7, 12, ... is:

- (1) 47 (2) 52 (3) 37 (4) 42

3. In an AP, if the first term $a = 5$ and the common difference $d = 3$, then the 3rd term is:

- (1) 8 (2) 11 (3) 14 (4) 17

4. The correct formula to find the sum of the first n terms of an AP (S_n) is:

- (1) $S_n = n/2[2a + (n+1)d]$ (2) $S_n = n/2[2a + (n-1)d]$

- (3) $S_n = n/2[a + (n+1)d]$ (4) $S_n = n/2[2a - (n-1)d]$

5. If the first term of an AP is a and the last term is l , then the formula for the sum of its n terms is:

- (1) $S_n = n/2(a - l)$ (2) $S_n = n(a + l)$

- (3) $S_n = n/2(a + l)$ (4) $S_n = (a+l)/2$

6. The common difference (d) of the AP -5, -1, 3, 7, ... is:

- (1) -4 (2) 4 (3) 3 (4) -6

7. If $k, 2k+1, 14$ are three consecutive terms of an AP, then the value of k is:

- (1) 3 (2) 4 (3) 5 (4) 6

8. The sum of the first 20 positive integers is:

- (1) 210 (2) 400 (3) 190 (4) 200

9. If $a_n = 4n - 1$ represents the general term of an AP, its first term (a_1) is:

- (1) 4 (2) 3 (3) 5 (4) 1

10. Which term of the AP 3, 8, 13, 18, ... is 78?

- (1) 12^{th} (2) 14^{th} (3) 16^{th} (4) 15^{th}

II. 2 Marks Questions

(2 × 2 = 4 Marks)

11. If the 15-th term of an Arithmetic Progression exceeds its 8^{th} term by 14, find the common difference of the AP.

12. Find the 11^{th} term from the last term (towards the first term) of the AP 10, 7, 4, ..., -62.

III. 3 Marks Questions

(4 × 3 = 12 Marks)

13. An Arithmetic Progression consists of 5 terms. The last term is three times the first term. If the middle term (3^{rd} term) of the AP is 12, find all the terms of the progression.

14. The sum of the 3^{rd} and 7^{th} terms of an AP is 6 and their product is 8. Find the sum of the first 16 terms of the AP.

15. The sum of the 4^{th} and 8^{th} terms of an AP is 24 and the sum of the 6^{th} and 10^{th} terms is 44. Find the first three terms of this AP.

16. Find the sum of all two-digit natural numbers which are divisible by 3.

IV. 4 Marks Questions

(1 × 4 = 4 Marks)

17. The sum of the first n terms of an arithmetic progression is 210, and the sum of its first $(n-1)$ terms is 171. If the first term of the arithmetic progression is 3, then find the arithmetic progression and find its 20^{th} term.